

## Chapter Two

### EXPERIMENT OF DR. FRANCIS G. BENEDICT OF THE CARNEGIE INSTITUTE ON INFLUENCE OF LOW-PROTEIN DIET IN CONTROLLING SEXUAL TENDENCIES AND ELIMINATING NOCTURNAL EMISSIONS

One of the most extensive and careful nutritional experiments in modern times on the influence of diet on human vitality, including sexual behavior, was conducted at the Boston Nutrition Laboratory of the Carnegie Institute of Washington located under the direction of Dr. Francis G. Benedict, the noted nutritionist. The results of this experiment have been published under the title, "Human Vitality and Efficiency under Prolonged Restricted Diet" (Publication 280, Carnegie Institute, Washington, D.C., 1919).

This experiment was carried on during the first world war when many food restrictions were in force. Its object was to investigate the effects of such food restriction on the general metabolism of the body. For this purpose, two squads of twelve men each were chosen from the students of Springfield Training School. One of these squads served as a control but was also used during a short period of dietary restriction. The other squad was put on a restricted low-protein diet for a period of four months, during which time these men were carefully studied.

The protein content of this diet was reduced from 100 grams per day, the amount consumed prior to the experiment, to about 60 grams. At the same time, the caloric value of the diet was reduced from between 3,000 and 4,000 prior to the experiment to about 2,100. Though the men lost twelve per cent of their weight, they were apparently normal throughout the course of the experiment and were able to carry on their regular work and exercises. During this time they were under observation, and regular readings were taken of their blood pressure, gaseous metabolism, nitrogenous metabolism, pulse rate, sex life, etc.

It was found that this dietary restriction caused a noticeable drop in blood pressure, in pulse rate, and in basal metabolism. During the entire experiment there was an accumulated loss of nitrogen of approximately 175 grams, which would correspond to about 1,100 grams of protein. These changes were correlated with definite changes in the sex life of these men, and these were of such a striking nature that they confirmed Evans' observations on the effects of a low-protein diet on the reproductive cycle of animals and showed that such a diet lowered the reproductive activity of men as well. In almost all cases, the subjects noted a reduction or cessation of sex desire, nocturnal emissions, erections, erotic dreams, and other voluntary as well as involuntary sexual phenomena.

In an article entitled "Sex Expression of Men Living on a Lowered Nutritional Level," Dr. W. R. Miles gives a detailed report on the sex lives of the subjects participating in Benedict's experiment. From the report it is clear that since physical and mental energy was maintained at a normal level throughout the course of the experiment, the resulting disappearance of sexual manifestations was not due to exhaustion but rather to the removal of a source of aphrodisiacal stimulation (by uric acid and other metabolic toxins) ordinarily supplied by food, especially by animal proteins. Dr. Miles writes:

"Our data indicates that nature demands a rather high metabolic level for the normal functioning of sex in man. Riddle and other workers find with animals that sex is more or less dependent on the metabolic level. These investigators



have shown that by modifying one they can modify the other. It is commonly believed that the sex instinct is stronger in men than in women. The large amount of metabolism data from this laboratory and other institutes has proven that the metabolism of men is higher than that of woman.

"In connection with the periodic psychological measurements taken during the course of the experiment, the men were asked from time to time for brief accounts of their subjective impressions, especially concerning their sex life. One man volunteered the statement that the reduced diet had in his case eradicated all sex desires. He was quite positive in this statement, and it therefore seemed necessary to collect evidence from the other subjects in order to prove or disprove the generalization of this assertion. . . The results clearly indicate a method of treatment for achieving restraint of sexual tendencies in pathological cases of sexual dissipation." (Miles, W. R.: "Journal of Nervous and Mental Diseases," 1919, p. 208).

Referring to Dr. Benedict's experiment on the effect of a low-protein diet in reducing sexual desire and expression, Professor Mclester, in his "Nutrition and Diet in Health and Disease," writes: "The sexual urge is materially influenced by diet. It has been the experience of those men who have served as subjects in feeding experiments with reduced rations, particularly when the protein quota was restricted, that there was a distinct lowering of the libido. During the war period in Germany, Rubner observed that the restricted food supply was responsible not only for a lowering of the libido in men but for amenorrhea (cessation of menstruation) and other menstrual disturbances."

It has been proven by Ehret, Haig, and other experimenters that a low-protein vegetarian diet will produce in women an increased infrequency of menstruation, just as reduction of protein intake does in the case of ovulation and the estrous periods of animals, and leads to a progressive diminution of the menstrual flow until it entirely disappears and is replaced by a bloodless discharge as occurs in female animals. Through dietary control and avoidance of erotic excitation of the ovaries, this mucous discharge can also be made to disappear, with resulting conservation of vitality and increased internal nutrition, leading to a regeneration of body and brain cells.

Let us now consider Dr. Benedict's experiment in greater detail. During the course of the experiment, the men were questioned concerning such matters as nocturnal emissions, tendency to erection, sex desire at dances and during periods of association with women, erotic dreams, etc. In most cases the men reported a marked diminution or a complete disappearance of sex desire, sexual dreams, and nocturnal emissions during the four months of low-protein feeding. But soon after returning to the previous high-protein diet, with increased consumption of meat, all of these sexual phenomena returned with normal intensity, including nocturnal emissions. Dr. Benedict says: "We believe that the self-observations of the men are, on the whole, trustworthy. It is clear that they show a decrease in sexual interest and expression, which, according to some of the men, reached the point of obliteration with lowered nutritional level, coincident to the prolonged reduced diet, and that, furthermore, there was a prompt return to normal conditions with uncontrolled feeding."

Let us now review the reports of these young men. Subject A noticed frequent erections while on the previous high-protein diet, especially when embracing his girl, and every morning on awakening. Nocturnal emissions occurred once a month. But on the low-protein diet he observed: "During the diet experiment there was no emission I can recall and, I believe, no erection. My roommate



at college noticed this; and one morning he said, 'Say! You have lost your manhood!' When with my fiancée during this period, nothing of a sexual nature would come to my mind. I think that if I had not been engaged, I would have left off visiting the lady or attending to any social functions. I was quite astonished and wondered at the change that had come over me."

Subject B noticed reduced sexual feelings. Subject C observed disappearance of nocturnal emissions; but on returning to high-protein feeding, these promptly returned and also erections. Subject D noticed decreased sexual tendencies and absence of erection while on the low-protein diet. Subject E writes: "I am very definite in the conviction that there is a reduction in sexual desire during the period of low-protein diet. During the time of losing weight, there was the least irritability. I think the kind of food affects sex appetite--meat causing stimulating of it. Do not recall any nocturnal emissions during the diet. Before the diet they were rather frequent. I have usually to put up a pretty stiff fight against the instinct and noticed that it was not nearly so difficult to control during the period of the experiment."

Subject I noticed after the experiment, and on returning to a rich-meat diet, increased nocturnal emissions, erections, and sexual excitement, which were reduced during the diet experiment. Subject J, previously, had nocturnal emissions once a week or more frequently. The low-protein diet caused them to greatly diminish in frequency. On returning to uncontrolled high-protein eating, they became as frequent as before. Subject L says: "The low-protein diet experiment just about unsexed me. During the first two weeks of the period there was at the end of each week sexual intercourse; but at these times there was no keen desire for passion, nor did the occasions produce the normal pleasure commonly associated with them. I thought to myself, 'How foolish to indulge in this simply by habit!'"

Subject L and M had no nocturnal emissions during the four months of the low-protein experiment. The latter had them twice or more a month before. Subject Q writes: "During the diet, sex was repulsive. I had no emissions and no erections; but after eating uncontrolled, both of these were frequent. The change, considering the short period of dietetic reduction, was more than I would have believed." Subject R said: "It seems to me that during the last week of the period of diet there was less flow of blood through the sex organs. They were less irritable, and there was much slighter tendency to erection; and not in reference to any particular time of the day, there was an absence of sex sensation."

The subjects in Dr. Benedict's experiment consumed 60 grams of protein daily, which was found by Professor Chittenden of Yale University, in his classic experiments on the protein requirement, which he reduced by nearly half the amount previously thought necessary, to be sufficient for physiological needs. But the later experiments of Dr. Hindhede, the eminent Danish nutritionist, have shown that the Chittenden protein standard of 60 grams daily was over twice as much as was really necessary; and he proved that on a diet in which Irish potatoes furnished the exclusive protein, only about 25 grams was necessary since he maintained hard working men in perfect health and vigor for 300 days to nearly two years on potato diets supplying no more than this amount of protein daily. This would mean that Benedict's subjects were really consuming more than twice as much protein as their bodies really needed and that if their protein intake was reduced to actual physiological requirements, according to Hindhede's nitrogen equilibrium experiments, all sexual phenomena would disappear from their lives, as is the normal state among wild animals during non-reproductive periods.



From the above evidence, we must conclude that sex in its ordinary manifestations among civilized human beings is not the product of natural instinct that it is generally supposed to be but is a chemotropism evoked or conditioned reflex (in Pavlov's sense) evoked in response to aphrodisiacal stimulation by foods and beverages, especially animal proteins, alcohol, coffee, and also tobacco. This tropistic reaction, in both its physical and psychical aspects, is subject to voluntary control through diet, an alkaline-forming, low-protein vegetable diet reducing it, while an acid-forming high-protein meat diet increases it.

The above evidence indicates that nocturnal emissions, in spite of their universality among the male sex, and contrary to popular and medical beliefs, are not natural physiological phenomena normal after puberty, nor do they provide a necessary release of semen when not discharged through voluntary sexual acts. For we shall see later that a definite physiological mechanism exists for the lymphatic resorption of semen from the seminal vesicles where it is stored so that there is no physiological necessity for its periodic vicarious discharge through nocturnal emissions, which, instead, should be regarded as a morbid manifestation resulting from an excessive protein intake and representing a vicarious release of the albuminous end-products of protein metabolism beyond what the kidneys can handle, which appears on a low-protein diet.

We may therefore conclude that nocturnal emissions, like other sexual orgasms, are to be regarded as a vicarious elimination of the end-products of protein metabolism and indicate that the protein intake is excessive and that the kidneys are overworked. When protein intake is reduced to bodily requirements, there will be no need for the gonads to come to the aid of the kidneys and eliminate surplus nitrogenous matter in this way. As a result, nocturnal emissions disappear, as well as the tendency to erections and sexual orgasms in general.

That nocturnal emissions, in spite of their universality, are pathological rather than normal and that in a perfectly healthy young man living on a non-stimulating low-protein diet, they will not occur, is the conclusion of Dr. Albert Mowry, instructor in genito-urinary surgery at Northwestern University Medical School. In a paper entitled, "Some Sexual Disorders in the Male: Impotency and Involuntary Seminal Emissions," speaking of nocturnal emissions, Dr. Mowry writes:

"I am a dyed-in-the-wool believer that these are unnatural and when frequent are pathological, doing damage to the economy and causing a sensation of weakness and lassitude that is not imaginary. . . Show me a lawyer who does not dread a nocturnal emission on a night preceding an appeal when his mental and physical forces must be at their best; or a pugilist who does not fear such a drain the night before a combat. I believe that in medicine there is too little attention paid to everyday conditions. Water kills more soldiers than bullets; and so do nocturnal emissions in reality cause more real damage than ordinary supposed.

"We do not notice our animal friends having nocturnal emissions, so far as I am aware. They have semen and seminal vesicles. Some of the strongest young men, physically, I have ever met practically do not know of having had them too frequently.

"Why mince matters? These losses are deleterious, and we should put forth every effort on the part of all concerned to bring them to an end.



"First of all, what in reality causes these losses? The main cause is a congestive condition of the deep urethra. . . It has been suggested that these hyperemias may be caused by some irritant in the urine due to faulty metabolism . . . A well defined diet must be ordered and a light supper must be eaten lieisurely. The bowels must be regular. Prevent distension of the bladder. These emissions occur practically always in the early morning and are due to the distended bladder pressing the already irritated deep urethra, causing an explosion."

The irritant in the urine to which Dr. Mowry refers is uric acid and other acid end-products of protein metabolism, which are produced in greatest quantity by animal proteins (i.e., meats of all kinds, fish, eggs, etc.). Coffee and tea also introduce uric acid into the system and irritate the deep urethra where lies the seat of sexual sensibility. The secret of sexual control is to maintain the blood and urine in as alkaline a state as possible, so as not to irritate the sexual centers in the mucous lining of the prostatic urethra. This is best achieved by a low-protein fruit and vegetable diet.

A high-protein meat diet, on the other hand, tends to produce sexual desire and nocturnal emissions by forming uric acid, which irritates the mucous lining of the prostatic urethra and also by producing intestinal putrefaction, generating poisons in the intestines which paralyze their peristaltic movements and cause constipation. Since the seminal vesicles, like the uterus, lie sandwiched in between the colon and bladder, constipation, involving a distended colon filled with hardened fecal matter, causes pressure on this organ and predisposes to emissions, just as it predisposes to uterine discharges and painful and excessive menstruation. Therefore the first step in the elimination of these conditions is to suppress intestinal putrefaction and overcome constipation and autointoxication through a low-protein vegetarian diet.

Dr. Tissot and Dr. Deslandes, the two great French specialists on sexual orders of men, also consider nocturnal emissions as pathological and have succeeded in causing them to disappear through a low-protein, strictly vegetarian diet. The first step in the cure of this morbid manifestation is to overcome constipation through such a diet. For this purpose, like Ehret, they put patients on fruits and vegetables exclusively, which caused nocturnal emissions to disappear. They strictly prohibit use of aphrodisiacal foods and beverages, such as meats, alcoholics, coffee, pepper, salt, and tea, and also tobacco. All these must be rigorously avoided if a cure of this "disease" (really a mild form of spermatorrhea, which represents a more advanced form of the same pathological condition, really an inflammation of the prostatic urethra, in which the seminal discharge tends to occur constantly rather than periodically).

Tissot observed a young man who was rapidly declining in health and strength as a result of frequent nocturnal emissions. He ordered him to stop eating meat and to go on a fruit diet, with the result that the emissions ceased and he regained his health. Dr. Arnold Ehret observed that on a low-protein fruit and vegetable diet, using no meat, eggs, or dairy products, there is a complete disappearance of nocturnal emissions in males and leucorrhea (genital mucous discharge) in women, who also experience a progressive decrease of the menstrual flow, which occurs at increasingly longer periods until it completely disappears, coincident with heightened vitality and better health due to the resulting conservation of vital fluids. Havelock Ellis mentions the case of a woman who stopped menstruating after adopting a vegetarian diet, but when she ate meat she suffered from painful and profuse menstruation. Many cases have been reported of menstrual pain and discomfort disappearing after giving up the use of animal proteins and becoming free from constipation and autointoxication



as a result. A young woman in California noticed that when she lived on fruits alone, menstruation disappeared; but when she adopted a lacto-vegetarian diet, using dairy products, she menstruated. The explanation is that cow's milk, being a secretion of the mammary glands, contains female sex hormones which act as ovarian and uterine stimulants, aside from its protein content and constipating tendency.

According to Professor Lydston, quoted above, a specialist on genito-urinary diseases, nocturnal emissions in the male represent a pathological condition resulting from the inflammation of the mucous membranes of the prostatic urethra, which should be treated and cured like any other disease. If left to run its course, this common disease terminates in an enlarged prostate at the time of the male climacteric; whose symptoms are to a great extent a result of this chronic long-continued urethral inflammation of which nocturnal emissions are the symptom. According to Dr. Deslandes, this inflammatory condition of the urethra, which is responsible for nocturnal emissions, results from hyperacidity of the blood and urine. This means that foods which acidify the blood and which contain an excess of acid-forming elements tend to irritate the genital mucous membranes and predispose toward such emissions, as well as to sexual manifestations in general.

On the other hand, an alkaline diet low in protein has the opposite effect by neutralizing acids that tend to produce inflammation of the prostatic urethra. The chief acid-forming foods are meat, fowl, fish, eggs, cheese, nuts, animal fats, butter, wheat, and oats. The chief alkaline-forming foods are vegetables, fruits, and potatoes. The former foods increase the inflammation of the prostatic urethra which is the physiological cause of nocturnal emissions, most sex desire and excessive and pathological sexual manifestations and diseases.

In the female, an acid-forming diet causes inflammation of the uterine mucous membrane and tends to cause the occurrence of leucorrhea and menstruation. By reducing such inflammation through an alkaline diet, Dr. Shroyer, a New England gynecologist, caused such female conditions to disappear and also caused uterine tumors to reduce and vanish, since these represent only a more advanced stage of the process of mucous membrane inflammation.

Fasting, which has been practiced since time immemorial by religious ascetics to overcome sexual inclinations, is a dependable method of sex control and sexual therapy because it helps free the blood of uric acid. But for the average high-protein feeder who suffers from chronic constipation and auto-intoxication (even if he has a daily bowel movement), it is best to first regenerate intestinal functioning by means of a low-protein strictly vegetarian diet composed chiefly of rice, potatoes, vegetables, and fruits. Haig found that rice is the least uric acid of grains, while the alkalinity of potatoes helps reduce uric acid formation, which explains Havelock Ellis's observation of the mildness of sexual feeling among the potato-eating Irish.